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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/672,595 | 09/26/2003 | Vincent J. Tekippe | 29165.00 | 8642 |

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KNOXVILLE, TN 37950-1295

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| EXAMINER |
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PENG, CHARLIE YU

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| ART UNIT | PAPER NUMBER |
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2883

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/672,595 | TEKIPPE, VINCENT J. | |
| | Examiner | Art Unit | |
| | Charlie Peng | 2883 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-21 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8-11 and 22-35 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 7, 31 and 36 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.


Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/26/03</u> | 6) <input type="checkbox"/> Other:  |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 2 recites the limitation "said pair of slots" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 depends upon independent claim 1, which regards a first member as an optical element (collimator **108**, actuator **106**, attenuator, filter) and a second member as a housing **102** for the first member. **[0024]** The applicant, in claim 9, contradicts claim 1 by designating the second member as the optical element. If it is the housing, then it cannot be the optical element at the same time. The examiner believes that the applicant is actually referring to an alternative embodiment as supported by lines 13-15 of **[0029]**: "In another embodiment, the housing 102 is a first member and the optical element 108 is a second member." Under these circumstances, claim 9 should not be made a dependent claim of claim 1.

Claim Objections

Claim 31 objected to because of the following informalities: the character "h" in line 1 should be deleted. If "h" is a reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims, it should be enclosed

within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m). Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 8- 11, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,757,471 to Jeong et al. in view of U.S. Patent 6,282,349 to Griffin. Jeong teaches an optical block assembly having a first optical member **F2/BF** and a second member for fixing and supporting the first optical member. (See at least **Fig. 7** and its descriptions) The second member includes a cover **C5** and a block **30** with V-grooves (aperture) **310** to receive the first optical member **F2/BF**. Jeong further teaches that the cover **C5** has two slots/openings **506** formed thereon in parallel, symmetrically and diametrically (exactly opposite) with respect to the inserted first optical member **F2/BF** and the V-grooves **310**. (See at least **Fig. 5** and its descriptions) Ridges **504/505** have inner surfaces facing each other that are perpendicular to the first optical member **F2/BF**. Jeong still further teaches that, while in use, an adhesive, epoxy-resin B, is filled in and hardened. Jeong does not teach the adhesive having a high viscosity so that it does not wick. Griffin teaches a method of using high viscosity adhesive to secure optical fibers inside ferrules so that the adhesive

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cures before it can wick. (See at least **column 2, paragraph 1**) It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a high viscosity adhesive in fixing the first optical member of Jeong. The motivation would be to prevent the adhesive from wicking to the end(s) of the block and contaminate the terminations of the first optical member. With reference to claim 3, since epoxy of amorphous silica is known to be an epoxy with high viscosity, (e.g. U.S. Patent 5,344,635) it would have been obvious to use it for the same motivation as well.

Insofar as the examiner can understand claim 2 due to the §112 rejection, the adhesive is constrained within outer boundaries of the optical black assembly, as clearly seen in Figs. 7-9.

With specific reference to claims 5 and 24, Jeong and Griffin discloses the claimed invention except for a particle size of amorphous silica. Since the applicant has not disclosed that a size of less than or equal to 10µm solves any stated problem or is for any particular purposes, **([0034])** it would have been obvious to one having ordinary skill in the art to optimize the size of amorphous silica particles as needs arise. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955) The motivation would be to provide an epoxy resin composition excellent in confidence for reflow resistance at a high temperature and moldability, and to provide a semiconductor device sealed with the epoxy resin composition. (e.g. JP2002022563 to Oura et al.)

With specific reference to claim 9, insofar as the examiner can understand the claim due to the §112 rejection, the applicant is simply switching the labels "first

member” and “second member” on separate parts of the optical device. This is rejected by designating part **F2/BF** of Jeong as the second member, and designating parts **C5** and **30** of Jeong as the first member.

With specific reference to claim 11, Jeong and Griffin does not teach the third member and the second aperture to receive the third member, however, the applicant is creating a duplication of what is described in claim 1 and Jeong discussed in related art that two sets of fibers (first and third members) can be connected via an optical-fiber block. (See at least Fig. 1 and its descriptions) It would have been obvious to one having ordinary skill in the art at the time the invention was made connect the first member (optical fiber) to the third member (optical fiber), since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co, v. Bemis Co.*, 193 USPQ 8. The motivation would be to create a WDM communication system able to transmit multiple wavelengths through a single fiber.

Claims 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. and Griffin. A method as claimed by the applicant for forming the optical device previously described closely adhered to the components previously rejected by Jeong and Griffin and the first member would be visible through the slots **506** prior to a step in the method where the adhesive is filled into said slots. Jeong and Griffin do not teach the adhesive being cured as a final step of the method, but curing epoxy adhesive is well known in the art as a critical step of securing optical fibers within optical devices such as connectors, and it would have been obvious to one having ordinary skill in the

art at the time the invention was made to include this step in a method of creating optical device. The support of this includes, for example, U.S. Patent 5,109,460 to Baek et al., where optical fibers are secured in V-grooves by epoxy. The motivation would be to harden the epoxy and limit unneeded movements of optical fibers within the device.

Allowable Subject Matter

Claims 4, 6, 7, and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Jeong et al. and Griffin teach the optical device having two members adhered together by epoxy with a filler of amorphous silica except for the filler's concentration being at least 68%. Applicant discloses that epoxy with amorphous silica filler of at least 68% concentration of filler experiences less than 0.1% linear shrinkage during curing and limits thermal expansion/contraction to less than 100 ppm per degree Celsius over a temperature range of -40 to +85 degrees Celsius. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claim 12 is allowed. Claim 12, although an independent claim, includes all the limitations of claims 1 and 4 as well as the amorphous silica filler having average particle size less than or equal to 10 micrometers. It is allowed by virtue of having more limitations than an allowable claim 4.

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Claim 13 is allowed. Jeong and Griffin teach the optical device having a plurality of optical fibers adhered together by epoxy but not the optical elements including at least one mirror, an actuator, and two collimators being placed in slots of a housing. U.S. Patent 6,751,374 to Wu et al. teaches an optical device that reflects light signals from collimators using mirrors, but the collimators are not placed diametrically opposed to each other relative to an opening for an actuator. Wu also does not teach the actuator interacts with the light signal, as the actuator moves a stage on which the mirrors are placed. There is no obvious motivation for one having ordinary skill in the art to combine prior art in addition to the lacking of certain limitations to reach the invention as disclosed by the applicant. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the claim.

Claims 14-21 are also allowed by virtue of being dependent upon claim 13.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

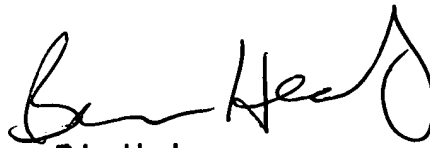
U.S. PGPub 2004/0022497 to Lindsey.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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